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A REPORT
OF
CASES OF ANEURISM,
IN WHICH
OPERATIONS WERE PERFORMED,
IN THE
RICHMOND SURGICAL HOSPITAL, DUBLIN.
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ALTHOUGH the cases of aneurism, detailed in the following Report, may appear to those Surgeons, whose extensive practice and connexion with Hospitals afford them frequent opportunities of observing the varieties of that disease, to possess but little novelty, yet I trust they will be perused with some degree of interest by less experienced practitioners, for whom this work is chiefly intended:

The operation on the external iliac artery is an acquisition to surgery of so recent a date, and of such importance, that it becomes the duty of every Hospital Surgeon to record the result of his experience in those instances, in which he may have been called on to perform it, and thus to enable the profession to estimate the value of the operation, and to appreciate the genius of that eminent Surgeon, to whom we are indebted not only for the introduction of an operation, which a few years ago would have been considered absurd or chimerical, but for all the improvements in this department of surgery, which have resulted from its success.

On a perusal of these cases it will be observed, that I adopted the mode of operating described by Sir Astley Cooper, in preference to that recommended by Mr. Abernethy. The opinions of the most experienced Surgeons in this city are divided with regard to the comparative merits of these operations; the difference between them consists chiefly in the direction of the incisions; however, after repeated trials of both on the dead subject, I was led to conclude, that Sir Astley Cooper's method afforded the operator a greater facility of applying the ligature to the artery, more room being obtained by it, and with less disturbance of the peritoneum, than by the other mode; and that if it became necessary, as in case No. 2, to apply a ligature to an higher part of the artery, Mr. Abernethy's operation might be then adopted, and with much less pain and risk to the

patient, than if that operation had been first performed, and unavoidably repeated.

Although the cases Nos. 1 and 2 terminated fatally, yet this result was by no means attributable to the operation in either case ; on the contrary, none of these dangerous and alarming affections occurred, which are usually apprehended from similar operations : neither patients exhibited the slightest tendency to peritoneal inflammation, and in both the collateral circulation was quickly and effectually established. Even in case No. 2, in which secondary hæmorrhage rendered a repetition of the operation indispensable, no unpleasant symptoms arose directly from it ; and the dissection proved that, had the operation been performed under more favourable circumstances, its effects would, in all probability, have been highly satisfactory.

The cases of poplital aneurism are related chiefly with a view of recommending a more general adoption, than is at present practiced, of a preparatory course, previously to operation. I can scarcely doubt but that in many cases of aneurism, in which operations have failed, from mortification of the limbs succeeding, the patient might have been saved by a delay sufficient to allow some progress to be made in establishing the collateral circulation ; and I feel confident that this desirable object may be promoted in most instances of recent disease, situated at a sufficient distance from the trunk, by compressing the principal artery of the limb for a few hours every

day, for a period which must vary according to the circumstances of the case.

I am aware of the difficulty of persuading patients to submit to the privations and restraint which constitute the chief part of a preparatory course ; and that under such circumstances surgeons may be compelled either to relinquish their patients altogether, or proceed to operation prematurely ; these obstacles, however, are not to be brought forward as arguments against a rational practice, nor are we to be deterred by the prospect of their occurrence from urging the expediency of that practice, and of using all the influence we possess to carry it into execution.

It may be further stated in favour of this preparatory treatment, that a sufficient number of instances of spontaneous cure of aneurism are recorded, to prove to us, that such events are by no means improbable, and as it is well known that nature is to be assisted in these her salutary efforts by rest, abstinence, depletion, by diminishing the quantity and impetus of the blood in the aneurismal artery by mechanical contrivances ; in fact, by the same means which, if employed at a proper period, and with sufficient perseverance, will contribute to the safety and success of the operation, an additional inducement is held out to us to give those measures a fair trial.

In pursuing a plan of treatment of this kind, the

circumstances to be principally attended to by the surgeon are, the progress of the local affection, and the effects of the general remedies employed on the constitution of the patient. In some instances, notwithstanding every effort to diminish the force of the circulating powers, an aneurism will increase rapidly;—a case of this kind will not admit of much delay, and the operation must be resorted to before the tumour has acquired such magnitude as to endanger the soundness of its integuments; and it is scarcely necessary to add, that the health of the patient appearing to suffer materially either from local pain, which is sometimes very acute, or from the lowering treatment, must be taken as an indication of the expediency of a speedy operation.

Case No. 3, excited more than ordinary interest amongst those who with me observed its progress. We had but little hesitation in ascribing the alarming symptoms which set in on the fourth or fifth day after the operation to inflammation of the lining membrane of the artery extending to the heart, and it was satisfactory to find that the plan of treatment suggested by this view of the case was, from the commencement, productive of the best effects.

Case No 4, in which the operation was performed on the same day with the former, is a remarkable contrast to it, from the total absence of, even as much symptomatic fever as might be expected to arise from a simple wound of the thigh, independently of the ligature of the artery, and of its

effect on the circulation of the limb—in this point of view alone the case appears worthy of being recorded.

The case of aneurism in the forearm was urgent ; the increase of the tumor had been for several days rapid, the pulsation was strong, and the pain excruciating ; under these circumstances, and reflecting on the extent and situation of the tumour, and on the nature of the circulation in the arm, amputation appeared at first to be the only resource ; this, however, would have deprived the patient of the means of subsistence, and have rendered her a burden to her family. I therefore determined on tying the brachial artery in the first instance, and the result exceeded my expectations, for although the tumor still exists, with but little diminution, it is quite free from pain and pulsation, and the limb is useful.

CASE, No. 1.

Jane White, the daughter of a farmer, aged 22 years, of a robust habit, florid and healthy complexion, was brought from the country, and admitted into one of my wards in the Richmond Surgical Hospital, on the 26th of May, 1819.

She had a large oblong tumour on the superior and anterior part of the thigh, close to Poupart's ligament, beyond the plane of which it projected considerably, and ascended so much that the liga-

ment was arched across the upper part of the swelling. Fluctuation was very evident, although the tumor was tense, but no pulsation could be felt, and the skin covering its most prominent point was a little discoloured.

On the inner side of this tumor, and extending to the left labium a smaller tumor existed, between which and the large one there appeared to be a direct communication at their bases, although a depression of the skin divided them on the surface; this tumor was also tense, with fluctuation; but its integument was healthy. The thigh, leg and foot were slightly œdematous; the patient complained of pain on the inside of the knee, and of some numbness of the entire limb—her pulse was perfectly regular; she had no palpitation of the heart or oppression of the chest, and her general health was in every respect unimpaired. Pressure upon the external iliac artery did not affect the size or tension of the tumors; neither were they perceptibly diminished by pressure directly applied to them. No pulsation could be discovered in the course of any of the large arteries below the tumor, although the temperature of the limb corresponded exactly with that of the other.

The patient gave the following account of the origin and progress of this affection:

About four or five months before her admission into Hospital, she occasionally felt shooting pains in

the groin ; at first these were momentary, and being ascribed to fatigue, no importance was attached to them ; becoming, however, more acute, and recurring more frequently, she was induced to feel the part affected with her hand, when she discovered a hard and moveable tumor, not larger than an almond. She denied the existence of pulsation in the tumor at this or any subsequent period, but admitted that when it was very painful, which was frequently the case after unusual labour or exercise, she felt throbbing, such as she had often experienced in a common boil or whitlow ; this sensation, however, was always of short duration.

The tumor continued almost stationary for more than a month, from which period it gradually increased, the pain becoming more severe, and particularly so when she coughed, sneezed, or suddenly exerted herself. From her childhood her life was active and laborious, and her health uninterrupted ; she could not ascribe her disease to injury or accident of any kind ; she has had no rigors—and her appetite, strength and rest have sustained no diminution.

May 28th. Having this day consulted with my colleagues on this important case, I proceeded, with their concurrence, to make an oblique puncture into the tumor with a very small lancet. On withdrawing the lancet, dark coloured fluid blood flowed from the wound in a gentle but continued stream—a director was introduced, along the groove of which

the blood flowed more rapidly, carrying with it small coagula, and particles of colourless fibrine ; the wound was then closed with adhesive plaster, and it united by the first intention.

June 1st. The tumor has increased, is more painful, and the fluctuation is more evident. Its appearance so closely resembled that of an abscess, that I was prevailed on by a gentleman who had not seen the case before, to make another puncture : the result, however, was the same as on the former occasion.

June 2nd. The tumor continues to increase ; is much more painful and tender than hitherto. Symptomatic fever, very high. Pulse 112. Tongue white. The patient complains of thirst and restlessness.

MEASUREMENT OF THE LIMB AND TUMOR.

	Inches.
Circumference of the diseased thigh, including the tumor at its most prominent part	- 19½
Circumference of the corresponding part of the sound limb	- - - 16
Circumference of the large tumor at its basis as nearly as it could be taken	- - 18
Perpendicular extent	- - 5½

In consultation this day it was admitted, that tying the external iliac artery afforded the patient the

only prospect of relief. The following day was therefore appointed for the operation. In the mean time the usual remedies to allay fever and pain were resorted to.

Thursday, June 3d. One o'clock.—I tied the external iliac artery, having conducted the several stages of the operation as recommended by Sir Astley Cooper, the fascia connecting the iliac artery and vein was more dense than I expected to find it, although the extent of the tumor at the upper part compelled me to apply the ligature on the artery as high as possible.

On the ligature being tightened, the patient did not complain of any particular sensation in the limb, neither was any perceptible alteration produced in the tumor.

In two hours after the operation the temperature of both limbs was the same (viz. 78°).

7 o'clock The temperature of the left foot (the limb operated on) was 74°, of the right 80°. The patient complains of increased numbness down the thigh and leg. Pulse 100; skin hot and dry; with a white tongue, and much thirst.

9 o'clock. No alteration in the symptoms.

Mittatur sanguis ad ̄xii.

Capiat Haust. Effervesc. 2dis horis.

11 o'clock. The temperature of the left foot 98°. of the right 96°. Pulse 92. Feverish heat and thirst diminished ; the patient disposed to sleep.

June 4th. 6 o'clock, A. M, Had some refreshing sleep, but complains of nausea and languor ; bowels confined ; pulse 108.

Temperature of left foot	-	82°
" of right	-	96°

Capiat. Mist. Salin. Aperient. M. S. ad effectum.

12 o'clock. Hitherto the temperature of the limbs was taken by introducing the bulb of the thermometer between the toes, but on applying it to the inside of each leg, a little above the ankles, the temperature of the left leg was 96°.

right 98°

7 o'clock, P. M. Left leg 96° Left foot 90°
 Right do 98° Right do. 98°
 Pulse 112.

9 o'clock. Aperient mixture had no effect; she continues to complain of nausea, but has no fullness or pain of the abdomen, nor tenderness on pressure near the wound.

Injiciatur Enema commune statim.

12 o'clock. Has vomited a little; her counte-

nance is expressive of sickness and anxiety ; pulse 120 and hard. The enema has been retained.

Rep. Enema. Venesection ad ℥xii.

R. Subm. Hydr. gran. iv.

Opil gr. iss.

M. divide in pil. tres. Capiat unam 4tis horis.

June 5th. *Contr. Haust. Effervescentes.*

7 o'clock, A. M. Bowels well opened ; nausea considerably diminished ; has drank freely of lemonade and whey ; has had a little sleep. Pulse 106. Tongue cleaner.

Temperature of left leg	-	104°
of right	-	102°

7 o'clock P. M. Again complains of sickness, although the bowels are free ; has had sound sleep during the day ; no pain in the abdomen or tumor ; one of the punctures a little uneasy ; the bandage covering it slightly stained with a bloody discharge. Pulse 106.

Temperat. of left leg	108°	left foot	104°
of right do.	106°	right do.	108°

June 6th, 7 o'clock, A. M. Has vomited a great deal of green bile during the night, since which the nausea has in a great degree subsided—has slept soundly since 5 o'clock. Pulse 104.

Temperat. of left leg	94°	left foot	84°
of right do.	92°	right do.	92°

1 o'clock, P. M. The bandages and dressings were removed from the tumor. The integuments had ulcerated for about an inch in diameter in the situation of one of the punctures, and a plug of coagulated fibrine projected through the circular aperture. The tumor was considerably diminished at its upper and internal part. Pulse 112.

8 o'clock. Tumor again dressed. Plug of lymph larger and more prominent. Pulse 112 with much hardness.

Venesectio ad 3x.

11 o'clock. Feels altogether more comfortable than she has done since the operation.

June 7th. 2 o'clock, A. M. Some hæmorrhage from the tumor, which was suppressed by moderate pressure with the hand for a few minutes. Complains of great uneasiness and weakness.

Capiat. Statim Haustum cum Tinct. Opii, gttis.
XXV.

8 o'clock. Has slept well for four hours and continues tranquil.

1 o'clock, P. M. The dressings changed, large

coagula have come away ; no hæmorrhage ; pulse 116 ; bowels confined.

Capt. Mist. Sal. Aperient m. s.

9 o'clock. Has slept comfortably for some hours, and is free from pain and uneasiness.

June 8th. 8 o'clock, A. M. Had a good night and is free from pain ; discharge from the tumor very considerable and offensive. Several large pieces of coagula in a putrid state removed.

12 o'clock. The discharge is so profuse as to render it necessary to change the dressings again. The coagula come away freely, and vary in appearance ; some resemble putrid blood ; others are of a yellow colour, and in consistence are soft, pulpy or gelatinous.

The dressings were removed from the incision of the abdomen ; the edges of the wound had united in some points, suppuration healthy and moderate in quantity.

Temperat. of left foot	92°	left leg	94°
of right do.	92°	right do.	92°

Pulse 110. The aperient mixture has not had the desired effect, but has produced nausea.

Omit. Mistura

Inj. Enema Com. statim.

8 o'clock, P. M. The enema has had no effect ; she complains of much sickness and lassitude ; countenance pale, with hectic patch on each cheek. Skin very hot ; pulse 116 ; a considerable quantity of bloody serum was discharged from the tumor. The dressings being removed, some loose coagula were taken out ; the discharge profuse and fetid. The cavity of the tumor appeared now almost empty ; its orifice greatly enlarged, and its internal surface dark coloured and very irregular. Some dossils of lint were introduced to absorb the discharge, and moderate pressure was applied by means of adhesive straps and a flannel roller.

June 9th. 7 o'clock, A. M. Slept pretty well ; countenance less expressive of languor and anxiety ; bowels free ; pulse 120 ; a dark and fetid discharge has stained the roller.

12 o'clock. Dressings removed ; the discharge thin and offensive ; complains of great weakness, but no pain ; the part operated on also dressed ; the granulations and discharge healthy.

Chicken broth.

11 o'clock, P. M. She is now asleep, and has been very tranquil during the evening ; skin very hot ; hectic cheeks ; pulse 130.

June 10th. 3 o'clock, A. M. Complains of a severe burning pain in the diseased cavity ; some ap-

pearance of fluid blood on the roller ; is very weak and inclined to vomit ; pulse 140.

Haust. Efferves, cum Tincturæ Opii gttis. x. alternis horis.

7 o'clock, A. M. She took two draughts, and had some refreshing sleep.

12 o'clock. Dressings removed ; several large putrid coagula have come away ; debility very great ; the emaciation very considerable during the last two or three days. She has expressed a wish for some wine and water, which was ordered.

11 o'clock, P. M. The discharge from the diseased parts highly offensive ; she thinks the fetor is in a great degree the cause of her sickness. She has no pain. Dossils of lint wet in nitrous acid lotion, were introduced into the cavity ; and the bandages were moistened with camphorated spirit of wine.

June, 11th. 12 o'clock. She slept well during the night, and feels easy to-day. The discharge diminished and the fetor greatly lessened ; the parts were dressed as yesterday. She was allowed some sheep's trotters for dinner.

9 o'clock, P. M. The dressings again removed. several large masses of coagula discharged, by which the bulk of the tumor was greatly diminished ; it was

now found necessary to give more support to the parts by increased pressure.

June 12th. 7 o'clock, A. M. Has passed a very restless night, although she has had no pain or hæmorrhage, and the discharge is much diminished; her countenance is remarkably pale and sallow, and she complains of great nausea. She is disgusted with her wine, and has no inclination for food or drink.

R. Confect. Aromat. ʒii.

Aq. Cinnamon.

—— *puræ aa.* ʒiii.

Tinct. Opii ʒi.

Sacchar. Alb. ʒi.

M. capt. cochi i. *amplum omni hora.*

12 o'clock. The diseased parts were dressed with dossils of dry lint, and the limb supported with the adhesive straps and roller; the incision on the abdomen healing; nausea returned; wishes for a little white wine.

11 o'clock, P. M. Has taken four ounces of white wine, much diluted, in the course of the day. Pulse 120; tongue clean; no thirst, or uncomfortable heat; feels tranquil and inclined to sleep; the limb easy.

June 13th, 1 o'clock, P. M. She slept a good deal at intervals, during last night and this morn-

ing, but still complains of increasing weakness and of nausea. Her skin has assumed a light yellow hue; she has no desire for food; tongue pretty clean.

Scarcely any discharge from the tumor; the surface of the cavity is dark coloured and dry; it was dressed with olive oil 2 parts; oil of turpentine 1 part.

11 o'clock, P.M. Took a bit of chicken, and some broth at three o'clock; sickness of stomach much less; debility very great. No discharge from the diseased cavity. Turpentine dressings renewed; they produced much pain, which having shortly subsided, she fell asleep.

June 15th. 12 o'clock. Slept tolerably well, and feels refreshed; nausea greatly diminished; she took a pint of arrow root jelly, seasoned with wine, during the forenoon, which has not disagreed with her; bowels free; pulse 116. Scarcely any discharge from the tumor.

The Peruvian balsam was substituted in the dressings for the oil of turpentine; this application produced much pain.

9 o'clock, P.M. Very languid and restless; black putrid fluid discharged from the tumor in great quantity; complains of much pain and heat in

the interior of the cavity. The parts were dressed with dry lint, and a bread and milk poultice applied.

Haust. Anod. statim.

June 16th. 12 o'clock. Countenance very much sunk; sallow, and occasionally flushed; she has no desire for food; does not complain of sickness, but feels much fatigued, having had no sleep during the night; pulse 124; bowels sufficiently free; has an acute pain in the external ankle of the left leg, without swelling or external inflammation; no pain in the tumor; discharge considerable, and offensive.

Dressed as yesterday.

9 o'clock, P. M. Weakness and restlessness much increased; pain of the ankle very acute; still no external inflammation, or swelling of the part; discharge from the tumor exceedingly fetid.

Admov. Catap. Effervescens.

Capiat Haustum Anod. cum Træ. Opii guttis.
xxx.

June 17th. 7 o'clock, A. M. Suffered excruciating torture until the effervescing poultice was removed, and an emolient one substituted; the opiate, although repeated at the expiration of two hours, had no effect. Complains of most acute pain in the

calf of the leg and ankle; frequent vomiting and retching; pulse 130; very languid; some difficulty in breathing. From this hour the progress of unfavourable symptoms was very rapid, and could not be retarded by any of the remedies employed. She continued to suffer great pain, and to labour under the most distressing anxiety, until 10 o'clock at night, when she expired.

Dissection. The tumor was laid open to its fullest extent, and its putrid contents having been washed out, the internal surface presented a very irregular appearance; no trace of a distinct sac could be observed. The small branches of nerves, which seemed to have resisted the putriferactive effects of the contents of the tumor, were completely insulated, and extended through the cavity unaccompanied by veins or arteries. The muscles, except where they formed the walls of the cavity, were healthy, but somewhat paler than natural. Rather more than three inches of the femoral artery was wholly destroyed; the upper extremity of it was found in a contracted state, immediately below Poupart's ligament. The lower part of the artery contained a coagulum, which filled its cavity for several inches; the outer surface of this coagulum was very firm, of the colour of fibrine, and in close apposition with the internal surface of the artery; the red globules and more liquid parts of the clot were contained within this fibrous layer, which gave the coagulum a tubular appearance. The anterior part of the crural vein, immediately below the liga-

ment, and where it lies parallel to the artery, was destroyed for more than an inch, and thus opened into the cavity of the tumor.

The external iliac artery contained a firm clot, which extended from the point at which the ligature was applied to the orifice of the internal iliac. This clot adhered very closely to the internal coat of the artery, and when torn from it, the latter appeared vascular and villous.

The ligature was quite detached, and had every appearance of having been so for some days.

CASE No. 2.

November 14th, 1820. John Lawson, æt. 28, by trade a printer, was admitted this day into the Richmond Surgical Hospital. His countenance is pale and sallow ; his stature is low ; his limbs small, and he appears to possess a weak and delicate constitution. Immediately below Poupart's ligament, on the left thigh, there is an aneurism of the femoral artery ; the tumor is as large as a swan's egg ; it pulsates strongly ; pressure above the tumor suspends the pulsation, and the swelling almost entirely subsides ; the integuments are healthy ; about two inches below this, and in the line of the femoral artery, there is another tumor of great magnitude, and

of a globular figure ; it extends to the internal condyle of the femur ; has a tense firm feel, with an obscure fluctuation ; the integuments are of a dusky yellow colour, and are traversed by three or four enlarged veins.

While the patient remains in an horizontal posture, both tumors are free from pain ; but considerable uneasiness, and a sense of increased heat, are produced by much motion of the limb.

Between six and seven months ago, while employed at his trade, he received a severe blow in his left groin, from the handle of the printing press. In a fortnight after this injury, he perceived a small pulsating tumor in the part which has gradually increased to its present size. In four months from the appearance of the upper swelling the lower one commenced ; the increase of the latter has been very rapid ; its pulsation, although not so strong as in the upper tumor, was quite distinct until within the last three weeks, during which it has entirely ceased, and the tumor has become remarkably hard and tense. There is some numbness of the leg and foot, but no œdema, except after exercise. In the year 1814 he had an ulcer on his penis, for which he was salivated in one of the London Hospitals ; and although his habits have been the reverse of temperate or regular, he has since enjoyed good health.

Having travelled yesterday and last night in the

mail coach from Waterford, a distance of seventy-six miles, he feels much fatigued, and complains of feverish heat, thirst, and restlessness; pulse 90, and regular; tongue white and dry.

Capiat Haustum Efferves. 2dis. horis, et Haust. Anod. hora somni.

November 15th. Is much refreshed by a great deal of tranquil sleep; bowels confined.

Capiat Infusi rosæ Cathart. unciam tertia qq. hora ad effectum.

December 1st. Since Lawson's admission into the Hospital, his general health is improved; for several days he laboured under great agitation; and as the disease did not appear to make progress, the treatment consisted merely of quietness, a light regimen, an occasional dose of the aperient solution, and an anodyne at night, when necessary. Having been for some days free from much constitutional disturbance, it was now deemed advisable to urge the expediency of an operation; to this measure our patient assented without hesitation.

December 4th. 1 o'clock. I performed the operation of tying the external iliac artery, as in the former case; the ligature was applied with great facility; on the knot being tied, the pulsation in the inguinal tumor immediately ceased, and it became flaccid; the lower tumor remained unaltered.

4 o'clock, P. M. Complains of pain in the wound ; the tumors and limb are free from any uneasy sensation ; pulse 96.

Temperature of aneurismal limb	} 92°
between the toes	
————— of sound limb	94°

8 o'clock, P. M. Pain in the wound diminished ; is a little restless.

Capiat. Haustum Anod. h. s.

December 5th. 8 o'clock, A. M. He rested well, and is free from pain at present ; pulse 112.

Temperature of both limbs equal, viz. 96°.

4 o'clock, P. M. Continues easy ; no tenderness of the abdomen, or nausea ; complains of some thirst ; temperature same as morning.

Pulse 120, with some hardness.

Mitt. Sang. ad 3x. Haust. Efferves. 2dis. horis.

December 6th. 8 o'clock, A. M. He is hot and feverish, and complains of pain about the wound, and some nausea ; pulse 120 ; bowels confined.

Rep. Missio Sanguinis ad 3x.

R. Misturæ Alkal. 3viii.

Tart. Sodæ et Kali 3vi. M.

Cap. Coch. ii. cum coch. i.

Succi limonis inter Efferves. 2dis. horis ad alvi solutionem.

8 o'clock, P. M. His bowels have been freed, and he feels better.

December 7th. 8 o'clock, A. M. Still some tenderness near the wound; pulse 112.

Rep. Venesectio ad 3x.

The inguinal tumor has acquired a solid feel, and pressure has now no effect in diminishing its bulk; the lower tumor is smaller, and much softer than before the operation.

8 o'clock, P. M. Is easy, but not disposed to sleep.

Capiat Haust. Anod.

December 8th. 8 o'clock, A. M. Had a restless night; complains of headach, and of some uneasiness in the lower part of the abdomen; bowels confined; pulse 108.

Venesectio ad 3x.

Mist. Ros. Cathart. 3i. 2dis. horis ad effectum.

December 9th. 8 o'clock, A. M. Bowels not yet freed ; complains of thirst and headach.

Inj. Enema com., statim.

8 o'clock, P. M. / The enema produced copious evacuations ; the headach and thirst have subsided ; pulse 112, and hard.

Venesectio ad $\frac{3}{4}$ viii.

℞ Pulver. Digital. Purp. gr. xii.

Cons. Ros. q. s.

M. ft. Pil. xii. Capiat. unam 4tis. horis.

December 10th. He feels pretty well.

December 11th. Has every appearance of amendment ; pulse 90.

December 12th. Passed a restless night ; has a slight oppression of his chest ; his bowels are kept free by his taking two or three aperient pills, when necessary ; pulse 86 ; some thirst.

Haust. Efferves. 2dis. horis.

December 13th. His sleep last night was disturbed and uncomfortable, and he feels much oppression of his chest ; pulse 100 ; bowels regular.

Venesectio ad $\frac{3}{4}$ x.

December 14th. Feels much better to-day than since the operation ; the wound looks healthy ; both tumors are diminished ; pulse 86.

Intermit. Pilulæ Digital.

December 18th. Continues to improve.

December 25th. The ligature came away with the dressings ; the wound is healing, and the tumors are much diminished, and are free from pain ; the lower one has a soft elastic feel, and the fluctuation of its contents is very distinct. The patient's countenance is improved ; he feels stronger, and has a good appetite ; bowels regular ; no thirst ; pulse 80.

December 28th. While Mr. Benson, one of my pupils, was in the act of applying a roller to the foot, a profuse hæmorrhage suddenly took place at the wound ; the dressings, &c. were quickly removed, and the blood was observed to flow per saltum, and with considerable impetus. Mr. Benson immediately applied his finger to the part at which he felt the jet of blood, and having made pressure for some time, the bleeding ceased. The patient, aware of his danger, was much agitated by this unfortunate occurrence. A composing draught was administered ; the strictest quietness and attention en-

joined, and arrangements were made that two of the pupils should watch at his bed side ; the wound was left uncovered.

December 30th. He had no hæmorrhage until last night, when about six ounces of blood were lost. A piece of sponge was applied, and the bleeding ceased.

January 2d. Several ounces of blood were lost by a sudden hæmorrhage last night, but it was suppressed as before by moderate pressure.

His bowels are confined, and a circumscribed tumor, with pulsation, is indistinctly felt in the abdomen to the left side of the umbilicus ; the action of the heart and arteries much excited ; the pulse small.

Inj. Enema com. quamprinum.

January 8th. Has had no hæmorrhage since the 2d, and his appearance is improved. Enemata have been occasionally administered, and have brought off much hardened excrement. The tumor observed on the 2d, contiguous to the umbilicus, and which strongly resembled an abdominal aneurism, has gradually subsided, and is now entirely removed. Arterial excitement much diminished.

January 12th. The sponge, which had been introduced into the wound to stop the bleeding, was

loosened by suppuration, and was therefore removed. At the bottom of the cavity which it occupied, a pulsation was seen, which was conceived to be the beating of a small artery. The wound was filled with dry lint, and a bandage applied.

January 16th. Hæmorrhage having recurred yesterday, and the patient being much reduced by the loss of blood, it was determined to apply another ligature to an higher part of the internal iliac artery, and several of my professional friends having favoured me with their assistance, I proceeded to the operation at eight o'clock this morning. While we were fixing the patient on the operation table, a profuse hæmorrhage took place, which was stopped by Mr. Cusack pressing with his finger at the bottom of the wound, until I inclosed the iliac artery in a ligature. This was effected without difficulty, an incision having been made through the abdominal parietis, in the direction of the artery, as recommended by Mr. Abernethy, so that this and the former incision somewhat resembled an inverted *T*. The patient bore the operation with great fortitude, and his progress was as favourable as could have been expected for several days. On the evening of the 21st, however, he had a very severe rigor, which continued for almost an hour; this was succeeded by an hot fit of a few minutes duration, and the paroxysm terminated in a profuse sweat, which lasted for some hours, and weakened him exceedingly. At 11 o'clock in the forenoon of the 22d of January he complained, for the first time, of

a sense of constriction about the throat, stiffness of the jaws, and difficult deglutition ; in a few hours tetanus was completely established, and run a course of more than common severity, uninfluenced by the liberal exhibition of opium, both by the mouth and injection. On the morning of the 24th the paroxysms recurred almost every five minutes, and at one o'clock in the afternoon of this day a violent spasm, by which the spine was incurvated backwards, released my patient from his sufferings.

Dissection. The larger tumor was found to consist of an irregular sac, with which the femoral artery communicated by a small aperture, which had the appearance of a rent in the coats of the artery anteriorly ; the sac was formed of all the contiguous structures, and its internal surface was dark coloured, and very unequal ; its contents were grumous blood, almost in a state of solution, and some soft coagula of lymph.

The femoral artery, at the place of the first ligature, was open at both extremities, but the superior orifice appeared actually dilated ; and we could not discover that any process had taken place here tending to the obliteration of the artery. It was a matter of surprise to those who attended the dissection that hæmorrhage had not sooner occurred, and that it did not prove immediately fatal.

The ligature applied in the second operation was completely detached from the artery, and lay loose in

the wound ; here the orifices of the artery were closed, and a coagulum of more than an inch in length occupied the upper extremity.

The preparation of all the parts concerned in this extensive disease, and the operations, is preserved by Mr. Shekelton, in the Museum of the College of Surgeons.

CASE, No. 3.

William Mackay, a farmer, aged 30 years, of a florid complexion, and delicate habit, was admitted in consequence of an aneurism in the right ham, on the 30th of June, 1820.

About five weeks before his admission he complained of pain and swelling of his leg, after hard labour in ploughing ; these symptoms subsided at night, but returned in the day, and becoming more severe, he found it necessary to have the leg rubbed when the tumor in the ham was discovered ; it was rather larger than an egg, and pulsated very strongly. The contents of the sac were quite fluid, as it could be completely emptied by pressure either applied directly to it, or on the crural artery at the groin.

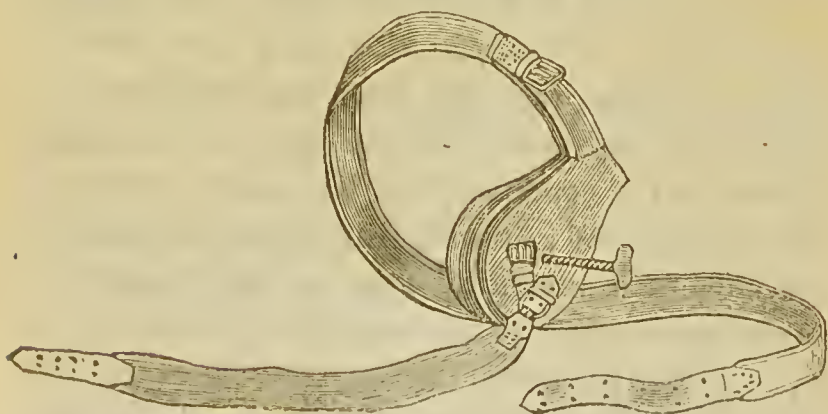
The disease in this case was so recent, that it was resolved to watch its progress for some time, before an operation should be decided on. The patient was accordingly directed to remain in an horizontal posture ; he was put upon a low regimen, and occasionally blooded and purged.

The tumor was so much under the controul of pressure on the inguinal portion of the artery, that I was not altogether without hope that by diminishing the current of blood in the trunk of the artery, so as to favour the coagulation of the contents of the sac, a cure without operation might be effected ; at all events, it was obvious that by giving time to the collateral arteries to be dilated, the success of the operation would be rendered less uncertain.

At first it occurred to me that the object I had in view might be attained by the application of a tourniquet in the ordinary way to the upper part of the thigh ; however the pressure made by the circular strap of that instrument on the small vessels of the limb being an objection to its use, I constructed an apparatus resembling a common truss for femoral hernia, the spring of which was much stronger, and the pad longer, of a more oval form, and more firmly stuffed than in the truss. The pad of this instrument was furnished with an inner plate of iron, which was connected with the outer iron plate, by means of a hinge close to the junction of the outer plate with the spring, and a tourniquet skrew passing through this plate had the effect, when turned,

of making a greater or lesser degree of pressure with the pad, on the part to which it was applied.

This instrument (*for a plan of which see below*) was put on like a common truss, the pad being placed in the line of the crural artery, immediately below Poupart's ligament, and it was effectually kept in its situation by a soft strap of shamois leather, which passed from the spring of the truss behind, on the inner side of the thigh, and buttoned in front on the outer plate of the pad. With this contrivance I possessed full power over the circulation in the femoral artery, at the same time that the collateral arteries suffered little or no compression. The principle of the instrument and the object for which it was employed were explained to and easily comprehended by the patient himself, so that he was enabled to regulate the degree of pressure according to his sensations; after a trial, however, of several weeks he could not be persuaded that the



plan adopted was productive of benefit ; during this period the tumor had obviously diminished, and its contents had acquired a firm consistence, but the patient complained that the instrument gave him much pain, and that his health and spirits had suffered materially from confinement, rigid abstinence, &c. the operation was accordingly agreed to, and I performed it on the first of September, being two months after his admission into the Hospital.

In the progress of the operation nothing remarkable occurred, except that an absorbent gland was so much enlarged, that it was found necessary to remove it ; the patient laboured under great apprehension, and after the first incision was made, the action of the heart and arteries was almost entirely suspended ; the pulse was imperceptible, even in the tumor, and in the denuded artery, until he was roused by the exhibition of wine and other stimulants. These circumstances were productive of some little delay.

I was induced in this case to apply two ligatures to the artery ; the upper one having been drawn as high as possible, was tied first, and the lower one having been separated from the upper to as great a distance as the connexions of the artery would permit, was also tied ; thus all that portion of the artery unavoidably insulated by opening the sheath, and by the introduction of the aneurismal needle and ligatures, was included between the ligatures when tied, and as they were applied to parts of the vessel

which were not disturbed in the operation, it was reasonable to suppose that the chance of secondary hæmorrhage, from a sloughing or ulceration of the coats of the artery, would be less than if the ordinary method was employed.

However plausible in theory the advantages ascribed to this proceeding appear, I am not disposed to attach much importance to it; the adoption of it may be an useful precaution when the surgeon finds that he has detached more of the artery from its connexions than is necessary; but otherwise the second ligature may be an unnecessary source of irritation.

September 2d. 7 o'clock, A. M. After the operation yesterday the patient experienced no uneasiness except what arose from a sense of fatigue in the limb; he slept well last night, and is perfectly easy this morning.

Capt. Coch. duo Mist. Ros. Cathart. tertiis horis ad effectum.

1 o'clock P. M. Complains of nausea and thirst; pulse hard and frequent.

Mitt. Sanguis ad ʒviii.

Haust. Efferves. 2dis. horis.

7 o'clock. Pulse softer and less frequent. Nausea relieved.

Sept. 3d. 7 o'clock, A. M. He was extremely restless until 4 o'clock; at this hour his bowels were freed, and he has since had some refreshing sleep. Nausea and thirst much abated.

7 o'clock, P. M. Bowels continue free, and his fever is moderate.

A Table shewing the state of the pulse and temperature of the limb.

DATE.	Pulse.	TEMPERATURE.			
		<i>Aneurismal Limb.</i>		<i>Sound Limb,</i>	
		Inside of knee.	Between great toe and next.	Inside of knee.	Between great toe and next.
One hour before operation	110	88°	74°	88°	74°
4 hours after do. -	88	95°	81°	90°	78°
16 do. do. -	80	90°	76°	90°	90°
28 do. do. -	104	96°	88°	94°	98°
40 do. do. -	108	94°	82°	92°	86°
52 do. do. -	120	98°	98°	98°	96°
64 do. do. -	108	98°	88°	96°	94°
88 do. do. -	108	94°	94°	92°	94°
112 do. do. -	112	94°	92°	94°	92°

Sept. 4th, 7 o'clock, A. M. Slept but little last night; complains of insatiable thirst; has a considerable oppression of his chest, a sense of weight about his heart, and often feels as if he was going to faint, pulse frequent and hard; but regular: there are a slight degree of hardness, and an erysipelatous blush about the wound.

Mitt. Sang. ad ʒviii. Capiat Mist. Ros. Cath.
M. S.

Cont. Haust. Efferves.

The adhesive straps were removed from the wound, and soft dressing, with a light compress moistened with the spirit lotion, substituted.

Sept. 5th. He got some sleep at irregular intervals last night. At four o'clock this morning he vomited a large quantity of viscid bilious matter, since which the sickness has subsided, and he feels much relieved; he was purged three times.

Sept. 6th, 7 o'clock, A. M. The oppression of his chest was so severe during the night, that it was deemed adviseable to apply a blister to the sternum, which has not yet produced a beneficial effect; he starts frequently from a short and uneasy sleep, and awakes in a state of alarm and agitation; he has violent palpitations of his heart; his pulse is hard and very frequent; his bowels are free.

Mitt. Sang. ad ʒviii.

Capiat. Tinct. Digit. purp. gtas. x. omni hora.

7 o'clock, P. M. He has had some sleep during the day. He took six doses of the Tinct. Digitalis, and feels considerably less uneasiness. Still, however, the action of the heart and the pulsation in the line of the large arterial trunks are violent.

Mittatur Sang. ad ℥viii. statim ; et repetatur Venesection post horas tres.

Capiat. Tinct. Digital. purp. gttas. xv. tertia qq. hora.

Sept. 7th, 7 o'clock, A. M. Blood-letting was performed at ten o'clock last night, after which he slept more comfortably than he has done for several nights ; oppression of the chest and palpitation much relieved ; bowels free ; pulse 108 ; not so hard as yesterday.

Cont. Tinc. Digitalis.

12 o'clock. The pulse has become more firm since morning, and the palpitation is troublesome. The bowels are free.

Mitt. Sang ad ℥vi.

Cont. Tinct. Digital.

7 o'clock, P. M. The blood-letting has afforded great relief. The pulse however is frequent, and hard as at noon.

Rep. Venesection ad ℥vi.

Sept. 8th. Slept a great deal during the night, and started seldom ; has neither oppression nor palpitation. The pulse 106. Complains of weakness and a slight degree of vertigo ; bowels free.

Capt. Tinct. Digit. gult. xv. 4tis horis.

Sept. 9th. Continues to improve. The wound has suppurated, and discharges healthy pus. There is a degree of tenderness in the course of the superficial absorbents on the inside of the thigh, and some faint red lines are observed to extend in the direction of these vessels. Pulse 94.

Tinct. Digital. gttas. x. 6tis horis.

Sept. 10th. His health improves daily, although there is a copious discharge from the wound, and the inflammation in the course of the absorbents is considerable. Pulse 90 ; bowels free.

A light bread poultice was applied to the wound, and a cold lotion to the inflamed absorbents.

Sept. 11th. Dyspnœa and palpitation have not returned for some days. Pulse 86.

Omit. Tinct. Digital.

Sept 19th. For some days the discharge from the wound, although of good quality, was more than could be desired ; there appears to be a sinus at the lower part, from which much pus is pressed at each dressing. The upper ligature came off.

Sept. 20th. The lower ligature discharged. Complains of great weakness.

To have a pound of mutton daily.

Sept. 21. The pain in his thigh was so severe last night as to deprive him entirely of sleep; the integuments in the middle part of the incision have healed, and there is a small opening at each extremity, which communicate with a large cavity. A probe pointed bistoury was introduced, and the cicatrix between these fistulous openings divided; a good deal of pus was discharged.

September 22d. Feels great pain in the thigh, a little below the wound.

Adm. Hirudines octo parti dolenti.

September 23d. The local bloodletting afforded much relief. The discharge from the wound continues profuse, and the patient complains of increasing weakness.

R Infusi Cort. Cinchon. ʒx.

Tinct. ejusdem ʒii.

M. Capt. Coch. iii. ter de die.

September 30th. It was necessary to apply leeches again to the thigh on the 24th, since which the pain has gradually subsided, and the discharge from the wound is diminishing.

Contr. Mist. Cinchona.

October 5th. The wound is quite healed. Although still very weak, he is able to sit up in his bed for some hours every day. The tumor in the ham is diminishing slowly; he thinks the bark mixture disagrees with his stomach.

Omit Mist. Cinchonæ.

To have a pint of porter daily.

November 30th. His health and strength are gradually improving; walks about with the assistance of crutches; the tumor diminishing.

December 24th. He has enjoyed extremely good health for some weeks past; knee joint still very stiff; the tumor much diminished.

He was this day discharged.

September 19th, 1821. I met Mackay accidentally this day. He has a very slight lameness, which he ascribes to an occasional pain in the knee, resembling rheumatism; he enjoys perfect health, and undergoes much bodily labour, without inconvenience. There is no trace whatsoever of the tumor.

CASE No. 4.

July 17th, 1820. James M'Owen, æt. 27, a labourer ; athletic, and always remarkably healthy, was this day admitted under my care into the Richmond Surgical Hospital.

He labours under an aneurism in the left ham ; the tumor is larger than a turkey's egg ; it pulsates strongly, and is very painful ; the integuments which cover the tumor appear thin, and a thrill may be felt, which resembles that of the aneurismal varix. Pressure on the tumor, or on the artery in the groin, removes both pulsation and tumor. The leg is much swelled, and becomes very painful and tense when kept for a few minutes in a depending position.

History.—On the 4th of May last he was climbing a wall, when his heel slipped suddenly from a stone ; at the instant he felt an acute pain in the calf of his leg, which subsided in a few minutes, and he felt no inconvenience from the injury for several days. In about a week after this accident he observed some swelling of his leg, and lameness, and in some days after he discovered in the ham a pulsating tumor, which was at that time as large as a walnut. It has since gradually increased, and the pain has been so severe, during the last fortnight, that he was unable to walk without crutches.

The same plan of treatment was pursued in this case as in the former ; his habit of body being more robust and plethoric than that of Mackay, depletion was carried to a much greater extent. In a few weeks no alteration could be observed in the tumor, but he became impatient, and was unwilling to submit to a continuance of that rigid discipline, which it had been thought expedient to adopt. Towards the latter end of August the tumor obviously increased, and assumed a conical form ; at one point the integuments felt very thin, and here the tumor was particularly prominent, conveying to the touch a sensation as if some of its immediate coverings had yielded, and the sac had protruded towards the surface. The peculiar thrill was also more distinct than on his admission, and the swelling of the leg had become greater. The operation was accordingly performed on the first of September ; only one ligature was applied to the artery in this case.

September 2d. After the operation yesterday he complained only of a tingling sensation in the foot. He slept well last night, and is this day free from all uneasiness.

September 3d. He has taken some purging medicine, which has had a good effect. The tumor remains sore for some time after being handled.

September 19th. Has not experienced the slight-

est constitutional disturbance since the operation; all the functions natural. The ligature came away this day with the dressings, and half the wound is cicatrized. The tumor in the ham is firm, and a little diminished.

September 28th. The wound is healed, and the tumor much diminished; he walks about with the assistance of a stick.

Discharged.

A Table shewing the state of the pulse and temperature of the limb.

DATES.	Pulse.	TEMPERATURE.			
		Aneurismal Limb.		Sound Limb.	
		Inside of knee.	Between great toe and next.	Inside of knee.	Between great toe and next.
One hour before operation	62	88°	72°	88°	72°
4 hours after do. -	72	94°	92°	94°	74°
16 do. do. -	72	90°	90°	86°	74°
28 do. do. -	88	94°	94°	90°	74°
40 do. do. -	64	90°	78°	90°	74°
52 do. do. -	80	94	94°	92°	92°
64 do. do. -	72	92°	72°	90°	72°
88 do. do. -	72	90°	74°	90°	74°
112 do. do. -	68	90°	74°	90°	74°

In the month of November this man called at the hospital to show himself; he was perfectly recovered;

had no lameness, or peculiar sensation in the limb ; the tumor was completely absorbed, and he had been for some weeks employed at his usual avocations with as much activity as ever.

CASE No. 5.

May 5th, 1821. Judith O'Donnel, æt. 28, by occupation an hat binder, married, and had six children, was this day admitted into the Richmond Surgical Hospital, labouring under an aneurismal tumor on the posterior part of the right forearm. The tumor commences immediately below the elbow, gradually increases to the middle of the forearm, where it begins to decrease, and is insensibly lost a little above the wrist ; it is very painful, pulsates strongly throughout its entire extent, and the skin which covers it has become, within these few days, inflamed and tender. The tumor is so prominent that the limb appears bent ; at the thickest part its circumference is eleven inches ; the corresponding part of the left arm eight inches. Pressure on the brachial artery suspends the pulsation in the tumor, and in the radial and ulnar arteries.

History.—About nine years ago she first perceived a small kernel in the place where the tumor

is now most prominent ; it was hard, without pulsation, and free from pain ; she is not conscious of having received any injury. During the first three or four years the increase of the tumor was very slow ; at the end of the fourth year it was about the size of an hen's egg, Since her marriage she has been obliged to use her arm at more laborious works than previously, and the tumor has accordingly increased ; but still the increase was very gradual, and she suffered no pain, nor did she perceive pulsation in the tumor until within the last three or four weeks. During the week preceding her admission into hospital the skin became red, and the pain was so severe as to deprive her of rest, and to render the hand and arm completely useless.

May 6th. I tied the brachial artery at about two inches above the internal condyle of the humerus. The pulsation in the tumor, and in the radial and ulnar arteries, immediately ceased, and the pain in a great degree subsided. In twelve hours after the operation she continued free from pain ; the tumor was less tense, but not perceptibly reduced in size.

May 7th. The pulse has returned to the wrist, but no pulsation could be discovered in the tumor ; it continues free from pain.

May 8th. Very little constitutional excitement ; her bowels have been opened since the operation ;

she has no thirst, and she sleeps well ; towards the evening of this day she complained of some pain in the tumor.

May 9th. The tumor has become tense and painful, although not so much so as before the operation ; the hand is slightly œdematous ; bowels free ; tongue clean ; pulse 80.

May 11th. Pain and œdema have diminished.

From this period the patient continued to improve ; pain and œdema shortly subsided ; she recovered the use of her fingers and hand, and she was discharged the Hospital on the 10th of June, with strong injunctions to refrain from all laborious employments.

Being anxious, before this report was sent to the press, to ascertain the actual state of the limb, I requested one of my pupils to visit the woman at her residence, and I have received from him the following satisfactory report :—

“ October 4th, 1821.

“ I have just visited Judith O'Donnel, and found her engaged in the laborious occupation of washing clothes. She says she can use her arm as well as ever she did. The tumor is nearly of the same size as before the operation, but it feels per-

fectly solid, except at the upper and back part, where there is a small point, in which an obscure fluctuation may be detected. No pulsation whatsoever can be felt in the tumor ; the pulsation of the radial artery is the same as in the opposite arm.

(Signed)

“ EDWARD TOWNSEND.”